

3.8 Cultural Resources

3.8.1 Affected Environment

3.8.1.1 Prehistory and History

The project sites are on lands that may have been inhabited or used by the Nez Perce, Cayuse, Umatilla, and Walla Walla tribes and, to a lesser extent, other Columbia Plateau tribes. The CTUIR (Cayuse, Umatilla and Walla Walla) lived in the Columbia River region of what is now northeastern Oregon and southeastern Washington for more than 10,000 years. They ranged over approximately 6.4 million acres, moving seasonally to harvest fish in the Columbia River lowlands, to dig roots in the foot hills of the Blue Mountains in late spring and early summer, to collect berries and hunt for deer and elk in the higher elevations in summer, and to return to the valleys for fall fishing and winter shelter. The CTUIR frequented the Columbia River and the lower regions of the Umatilla River and Willow Creek; the Walla Walla Tribe frequented the Columbia, Walla Walla, and Snake Rivers; and the Cayuse lived along the upper courses of Columbia tributaries as far as the Grande Ronde River.

The NPT lived and traveled across 17 million acres in Oregon, Washington and Idaho, including the valleys of the Snake, Clearwater and Salmon Rivers and their tributaries. The Nez Perce traveled seasonally, traveling to the lower valleys to dig root crops and fish in the Snake and Columbia Rivers in spring, moving to the high country in the summer, and returning to lower river valleys for the winter. The prehistoric record of the Clearwater River subbasin indicates an early foraging culture with a transition to semi-subterranean houses about 6,000 years ago (BPA et al. 1997). The NPT has always fished. Fish, especially chinook salmon, have served as a primary food source, trade item and cultural resource for the Tribe for thousands of years. The economy and cultural history of the Nez Perce people has evolved around northwest salmon runs (Ashe et al. 2000). The religion of the Nez Perce – their stories, legends and ceremonies regarding fish and rivers all reflect this bond (Landeon and Pinkham 1999).

One of the first historic records in this area dates from 1805 and 1806, during the Lewis and Clark Expedition as the two explorers were making their way to the Pacific. Early records also include the establishment of fur trading posts, missions and forts in the early 1800s. Fort Nez Perce (later named Fort Walla Walla) was established in 1818 and became a regional commercial center for the military, white trappers and traders and the local tribes. In the 1840s, settlers began to move westward along the Oregon Trail and in late 1848, Congress established the Territorial Government of Oregon (that covered a large area of land, including what later became the states of Washington, Oregon and Idaho). In the 1850s, the federal government negotiated treaties with several area tribes that established reservations. Although moved to reservation lands, both the NPT and the CTUIR reserved the rights to continue to fish, hunt, and gather traditional foods and medicines throughout the lands they ceded to the United States.

In the 1860s, gold was discovered in river bars near what is today HCNRA. In the late 1800s and early 1900s, mining interests shifted to hard-rock operations such as that on Eureka Bar area near the mouth of the Imnaha River and at about the same time, the area experienced an influx of homesteaders (U. S. Forest Service 2003). Early homesteaders grazed cattle and sheep on their 160-acre allotments and nearby public lands. Between 1910 and 1918, many of these original homesteads were either bought out by larger ranching operations or the lands reverted to the federal government as homesteaders were driven out by depressed livestock prices and weather unfavorable to farming and ranching (U.S. Forest Service 2003).

In current times, farming and ranching continues to support local residents and fishing in the Columbia and its tributaries continues to be a mainstay for both sustenance and cultural activities of area tribes. Nez Perce tribal elders believe that the loss of their traditional fishing sites and the decline in the Chinook salmon runs in

the Columbia River drainage is one of the greatest tragedies of this century (Landeem and Pinkham 1999). Further declines in the Columbia River salmon fishery will result in the loss of a valued food source, source of spiritual strength and decline in value of Treaty-assured fishing assets (Myer Resources 1999).

3.8.1.2 Surveys and Consultation

The NPT Cultural Resource Program Archaeologist surveyed the sites for cultural resources. These surveys consisted of pre-field background research and on-site surveys to identify any cultural materials present and to gauge the likelihood of the presence of unseen cultural materials. Test excavations (shovel-surveys) were performed at two sites (Lostine River Hatchery and Imnaha Final Rearing Facility) deemed by the Tribal Archaeologist to have the potential for undiscovered cultural resources due to vegetation limiting ground visibility, past agricultural activities and a likelihood of buried cultural deposits (NPT 2002).

The Tribal Archaeologist (NPT 2002) did not observe any cultural material or note any structures eligible for listing on the National Register of Historic Places at any of the project sites. BPA has requested confirmation from the Oregon State Historic Preservation Officer (SHPO).

The CTUIR, responding to an inquiry from BPA, stated that the tribe considers the proposed sites Traditional Cultural Properties (TCPs) and that they are identified as such in their oral histories (Farrow 2002). BPA, in consultation with the CTUIR, agreed to require an on-site monitor during all proposed ground disturbing work at all sites to ensure protection of any cultural resources should they be discovered. BPA's consultation with the Oregon SHPO under section 106 of the National Historic Preservation Act has been initiated, which involves a determination of finding of no effect on cultural or historic properties, and includes the requirement for an on-site monitor as well. BPA is currently awaiting SHPO's response to that determination.

An overview of the laws and regulations protecting sites and materials of historic interest, as well as TCPs, is presented in Chapter 4.

3.8.2 Evaluation Criteria

Potential impacts to cultural resources would be characterized by the degree of physical disturbance of a cultural site or degree of improvement to a cultural resource (such as traditional salmon fishery).

3.8.3 Consequences of the Proposed Action

3.8.3.1 Lookingglass Hatchery

Oregon Parks and Recreation Department records indicated no recorded cultural or historic sites near the Lookingglass Hatchery (Figures 2-2 and 3.9-1). During the on-site survey, no cultural materials were observed in the project area. Since no cultural materials were detected during surveys, and this is an existing facility and modifications would occur within areas already developed, no impacts to cultural resources are anticipated. Construction activity would be monitored by a person knowledgeable about cultural resources. If evidence of cultural materials is found, site work or activity would be halted until the site could be assessed. Notification of and consultation with the SHPO, NPT Cultural Resource Program and CTUIR would also occur as appropriate.

3.8.3.2 Lostine Adult Collection Facility

Oregon Parks and Recreation Department records indicated no recorded cultural or historic sites near the Lostine Adult Collection Facility (Figures 2-3 and 3.9-2). During the on-site survey, no cultural materials were observed in the project area, so no impacts to cultural resources are anticipated. However, construction

activity would be monitored by a person knowledgeable about cultural resources. If evidence of cultural materials is found, site work or activity would be halted until the site could be assessed. Notification of and consultation with the SHPO, NPT Cultural Resource Program and CTUIR would also occur as appropriate.

3.8.3.3 Lostine River Hatchery

Oregon Parks and Recreation Department records indicated no recorded cultural or historic sites near the Lostine River Hatchery (Figures 2-4 and 3.9-3). During the on-site survey, no cultural materials were observed in the project area. A site shovel-survey also showed no indication of cultural materials. So, no impacts to cultural resources are anticipated. However, construction activity would be monitored by a person knowledgeable about cultural resources. If evidence of cultural materials is found, site work or activity would be halted until the site could be assessed. Notification of and consultation with the SHPO, NPT Cultural Resource Program and CTUIR would also occur as appropriate.

3.8.3.4 Imnaha Final Rearing Facility

Oregon Parks and Recreation Department records indicated only one cultural site in the area (35WA812), near the mouth of Dunlop and Thorn Creeks, located on the opposite side of the Imnaha River from the project area. No proposed new facilities (bridges, power lines, etc.) would be located near this site.

During the on-site survey, an irrigation ditch was observed on the southwest edge of the project site within the area of potential effect (where site disturbance or construction is expected, Figure 2-6). In addition to the irrigation ditch, an old homestead and orchard are known to exist in the project vicinity outside of the area of potential effect. A site shovel-survey showed no indication of other cultural materials. Since the ditch, homestead and orchard would be avoided by project activities, no impacts to cultural resources are anticipated. However, construction activity would be monitored by a person knowledgeable about cultural resources. If evidence of cultural materials is found or if impacts to known materials occur, site work or activity would be halted until the site could be assessed. Notification of and consultation with the SHPO, NPT Cultural Resource Program and CTUIR would also occur as appropriate.

3.8.3.5 Imnaha Satellite Facility

The NPT Archeologist is conducting a cultural resource review for the proposed powerline to be located under or along the Upper Imnaha River Road connecting the site to the existing PacifiCorp substation about six miles to the north. Though no sites are expected in the road corridor, if any are discovered during survey or installation of the line, they would be avoided by rerouting the line underground or taking it overhead to avoid further disturbance of the ground. All other construction activity would be monitored and if evidence of cultural materials is found, site work or activity would be halted and the Oregon SHPO, NPT Cultural Resource Program and CTUIR would be notified and consulted regarding more detailed investigation. Since no cultural materials were detected during the site survey, and this is an existing facility and modifications would occur within areas already developed, no new impacts to cultural resources are anticipated.

3.8.4 Cumulative Impacts

As described in EIS Section 3.2.4, other projects in the vicinity of the Proposed Action sites include renovation of existing and construction of new private residences, rehabilitation of Wallowa Lake Dam, numerous habitat restoration projects, salmon recovery projects, watershed management activities, and the Nez Perce Tribal Hatchery Program. These projects would avoid or mitigate impacts to cultural resources, and when considered together with the Proposed Action no adverse cumulative impacts are expected. Projects that benefit chinook, including the Proposed Action, could have a beneficial cumulative effect on that cultural resource.

3.8.5 Consequences of Taking No Action

The No Action Alternative would have the no adverse impact on cultural or historic resources physically located on or in the ground at the sites. The No Action Alternative has the potential to adversely impact the salmon resources in the area due to continued stock declines if not augmented by the project.

3.9 Aesthetics (Visual Quality)

3.9.1 Affected Environment

3.9.1.1 Regional Landscape Setting

The project sites, along with landscape features such as main roads, towns, rivers, and mountain ranges, are depicted in Figure 1-1. Much of the area consists of basalt plateaus dissected by river canyons, ranging primarily from 2,000 to 5,000 feet elevation with a mix of grassland and shrubs at the lower elevations and scattered stands of conifers at the higher elevations concentrated on north slopes and in stream bottoms. Rangeland and some agricultural land characterize much of the lower open valleys. The Blue Mountains, with dense stands of coniferous forest, rise to 6,000 feet along the western side of this region. Hells Canyon of the Snake River, a steep gorge over 4,000 feet deep, borders the area to the east along the Oregon/Idaho border. To the south rise the Wallowa Mountains with rugged granitic peaks up to 10,000 feet, alpine meadows and dense stands of coniferous forest. The region's development pattern includes sparse settlements and rural land uses, including visible signs of agricultural and timber activities. The scenery and recreational resources also attract numerous recreational visitors and tourists to Northeast Oregon.

3.9.1.2 Grande Ronde Subbasin

The Grande Ronde River originates in the Elkhorn Range of the Blue Mountains and meanders through the Grande Ronde valley between the Blue and Wallowa Mountains, to its confluence with the Snake River in Washington 212 miles from its source. High plateaus dissected by precipitous canyons characterize the lower basin. Lookingglass Creek is one of these lower basin tributaries to the Grande Ronde. The steep-sided canyon is a mix of conifer forest, riparian streamside vegetation, and grassy slopes of native bunch grasses. Much of the surrounding area shows evidence of logging operations.

The Lostine River, also within the Grande Ronde subbasin, originates at 7,300 feet in the pristine Eagle Cap Wilderness in the heart of the Wallowa Mountains. The river flows 25 miles in a northerly direction to its confluence with the Wallowa River, several miles north of the town of Lostine. The Wallowa River flows into the Grande Ronde River about three miles downstream from where Lookingglass Creek enters the Grande Ronde.

In the vicinity of the proposed Lostine Adult Collection Facility and Lostine River Hatchery sites, the Lostine River emerges from the mountains and passes through a sparsely forested valley. Steep mountain slopes enclose the valley to the east and west. Riparian vegetation lines the riverbanks and open range and agricultural lands with rural residential development characterizes the open valley bottom. Access and views of the area are available from the Lostine River Road (County Road 551), which generally follows the river from the town of Lostine up into the mountains. The Lostine River is designated as Wild and Scenic beginning about one mile upstream of the proposed hatchery site.

Lookingglass Hatchery — Situated about 16 miles north of the town of Elgin, the Lookingglass Hatchery lies within a narrow canyon at an elevation of about 2,950 feet. Figure 3.9-1 presents photographs taken at the Lookingglass site (Figure 2-2). The site occupies about 11 acres of sloping terrain located on the east side of Lookingglass Creek. Jarboe Creek empties into Lookingglass Creek at the south end of the site between an existing settling basin and existing access road. The existing hatchery buildings, tanks and pavement, along with a combination of trees, riparian vegetation and grasses cover the site. The existing facilities are generally located in level areas with sparse vegetation. Existing facilities include several concrete-lined ponds, numerous shallow rectangular-shaped tanks or raceways, a concrete weir that spans Lookingglass Creek, several single story metal-clad buildings used for maintenance and storage, and a paved outdoor storage area enclosed by chain link fence. Three employee houses are on the south end of the site. Lookingglass Hatchery is accessed via a paved road that intersects the gravel county road at Palmer Junction, located about two and one quarter miles south of the site. Although not a through-road, the access road is used by the public when they visit the hatchery. Except for hatchery visitors, the existing Lookingglass Hatchery is not visible to the public due to its distance from the county road and the screening provided by intervening terrain and tree cover.

Lostine Adult Collection Facility — The Lostine Adult Collection Facility site (Figure 2-3) is located on the Lostine River about one mile south of the town of Lostine, within an area generally comprised of pastures, farms, corrals and scattered rural residences. An existing trout farm consisting of a residence, outbuildings and several ponds lies immediately to the northwest. Access to the site is via the Lostine River Road, then by a private road and bridge across the river to the site and the existing trout farm.

Photos of the site are shown on Figure 3.9-2. Dense riparian vegetation including a mix of willows and cottonwoods is found along the river frontage. Upland vegetation includes a mix of fir and cottonwoods. River rocks of various sizes are visible along the riverbanks as well as along areas of exposed river bottom. Situated at an elevation of about 3,470 feet, the site slopes gently to the north. Existing facilities occupy land on both sides of the river including a metal and wood outbuilding on the west side of the site, a diversion structure on the east side and a fish ladder that spans the river (Photo 5). Photo 7 shows the fish ladder and existing structures looking upstream from the private bridge.

Public views of the site and existing facility are available from places along the Lostine River Road. However, as shown in Photos 6 and 8, views of much of the site from the roadway are partially or fully screened by relatively dense vegetation. The number of potentially affected viewers is low due to light traffic volumes and the vegetation screening.

Lostine River Hatchery — The site for the proposed Lostine River Hatchery (Figure 2-4) lies in the steep-sided Lostine River valley where the river emerges from the Wallowa Mountains. Riparian vegetation lines the riverbanks and open rangeland with scattered rural residences predominates in the open valley bottom. Ranch buildings and a small residential subdivision are located north and west of the site. This is approximately a six-acre site of very gently sloping terrain at about 3700 feet elevation, accessible by Granger Road, a residential gravel road off the Lostine River Road.

Figure 3.9-3 presents four views toward the Lostine River Hatchery site. Portions of the site are open grasslands and pasture; in other locations the site is covered with conifers and riparian vegetation. The site is fenced and shows signs of logging and grazing and includes an existing single-story residence. The gravel access road and a powerline run down river to the temporary rearing site.

Public views of the site are available from the north end of Granger Road and the adjacent residential subdivision (Photo 10). From further away on Granger Road and from the Lostine River Road, several hundred yards across the valley, vegetation screens views of the site (Photo 9). Photos 11 and 12 show views

of the proposed intake structure location as seen from the bridge where Lostine River Road crosses the river. In general, views of the intake structure location would be limited by intervening vegetation.

3.9.1.3 Imnaha Subbasin

The Imnaha River watershed originates in the Wallowa Mountains with most of the watershed located in the pristine Eagle Cap Wilderness. The Imnaha River is a tributary of the Snake River and is designated Wild and Scenic. Steep canyon walls of layered basalt rim rock with scattered stands of conifers, riparian streamside vegetation and grassy slopes of native bunch grasses characterize the deep river canyon in lower reaches (*e.g.*, the Imnaha Final Rearing Facility).

Many small creeks flow into the river from the ridge to the east dividing the Imnaha River and Hells Canyon. The Upper Imnaha River Road parallels the river for much of its length and a 230kV-transmission line follows the river in the vicinity of the proposed Imnaha Final Rearing Facility and Imnaha Satellite Facility sites.

Imnaha Final Rearing Facility — Located approximately five miles south of the town of Imnaha, the Imnaha Final Rearing Facility site (Figure 2-6) is situated on the west bank of the Imnaha River. This ten-acre site lies between the river and the base of steep basalt canyon walls that rise to elevations of over 6,000 feet. Native grasslands predominate on the open slopes and pockets of forest and riparian vegetation are found along the river. Scattered rural residences, ranch buildings, and cleared pasture are found along the road north and south of the site. Photos 13 through 16 show views of the site (Figure 3.9-4).

The Imnaha Final Rearing Facility site primarily occupies a large pasture of introduced weedy forbs situated at an elevation of about 2,000 feet. A narrow band of dense mature riparian vegetation, including willows and shrubs, lines the riverbank on the site (Photos 14 and 15). Site access is via the Upper Imnaha River Road and across a private bridge. As shown in Photos 13 and 16, a non-continuous mix of riparian vegetation and conifers is found along the roadway. The site is currently undeveloped except for a steel bridge across the river, primitive access road, irrigation ditch and orchard. A rural ranch residence is located across the river east of the site. Photo 16 shows the view looking north from this residence. Partially screened foreground views of the site are available from places along the adjacent Upper Imnaha River Road. The number of potentially affected viewers is low due to light traffic volumes, the speed of travel past the area, and the attraction of other scenic features.

Imnaha Satellite Facility — The Imnaha Satellite Facility (Figure 2-8) is located on the west bank of the Imnaha River, approximately 25 miles upstream (south) of the town of Imnaha. Site access is via the Upper Imnaha River Road (a Forest Service Road at this location), which is not passable during winter months. Bands of conifers line the valley bottom and side slopes. South of the site (upstream), Forest Service campgrounds are located in park-like stands of ponderosa pine. Traveling north from the site, natural openings in the forest and cleared pasturelands are found with rural residences and ranch buildings. An existing high-voltage transmission line traverses the site along the river corridor.

The site consists of approximately six acres lying between the public roadway and the Imnaha River. Figure 3.9-5 shows four views of this site. The existing facility includes a wooden bunkhouse and parking area (Photo 18); a septic field, concrete hatchery structure enclosed by chain link fence and concrete-lined rectangular raceways (Photo 19); a weir, a fish ladder, an intake structure and generator/shop building. In addition to the existing structures, ornamental landscaping, mixed conifer forest and riparian streamside vegetation frame the site.

Photos 17 through 20 show public views of the site as seen from places along Upper Imnaha River Road. Portions of the bunkhouse, parking area, and raceway structures can be seen from these locations. The

existing weir and fish ladder entrance are visible in the distance from one spot along the road, but most of the site is screened by existing vegetation (Photo 17). The number of potentially affected viewers is low due to relatively light traffic volumes and typical winter road closures. Primary access to the upper Imnaha River is via another road, the paved Wallowa Loop Road.

3.9.1.4 Public Plans and Policies Pertinent to Aesthetics

The Land Use, Recreation and Transportation section of this EIS (Section 3.10) identifies the various land use plans or policies for areas including the Proposed Action sites. As outlined in that section, the Lookingglass Hatchery is within the area covered by Union County's land use plans. The other four sites are within the area covered by Wallowa County's land use plans. The Imnaha Satellite Facility is exempt from county regulations because it is a federal site. The two Lostine River sites and the Imnaha Final Rearing Facility site may be reviewed by Wallowa County's Natural Resources Technical Advisory Committee (Black 2002).

Two of the sites, the Imnaha Satellite Facility and the Imnaha Final Rearing Facility, are situated along the Imnaha Wild and Scenic River corridor. The Imnaha Satellite Facility is located on land administered by the Wallowa-Whitman National Forest within the HCNRA. The Imnaha Final Rearing Facility, while on private property, is located near Forest Service land (also within the HCNRA).

The visual resource management framework adopted by the Forest Service pertains to both designated Wild and Scenic River corridors and National Forest System lands. The Forest Service applies an inventory and assessment system known originally as the Visual Management System (VMS). In 1995, the Forest Service adopted the Scenery Management System (SMS), which incorporates and updates many aspects of the original VMS. As part of this system, the Forest Service has established management goals to describe the acceptable level of modification associated with land use activity in a given area. These standards or Visual Quality Objectives (**VQO**) range from "preservation" which is typically applied only to highly sensitive landscapes such as wilderness areas to "maximum modification," a standard that allows land use activity that may appear dominant in relationship to the natural landscape while not completely harmonizing with the natural setting.

The Wallowa-Whitman National Forest Land and Resource Management Plan identifies VQOs for areas within the National Forest (U.S. Forest Service 1990). In addition, the Imnaha River Wild and Scenic Management Plan (U.S. Forest Service 1993a) and the Lostine River Wild and Scenic Management Plan (U.S. Forest Service 1993b) identify VQOs for areas within the Wild and Scenic River boundaries (see also Sections 3.7 and 3.10 of this EIS).

The Forest Service applies the "retention" VQO standard to the two Imnaha sites within or near the Wallowa-Whitman National Forest (U.S. Forest Service 1996). The retention standard provides for "natural-appearing landscape where management activities are not visually evident." The Forest Service does not prohibit any specific management activities within areas designated "retention." Under the updated Forest Service SMS, the retention standard translates to a "high scenic integrity level", which means that, when viewed by the public, the natural or naturally appearing landscape character looks intact. Deviations from this landscape quality may be present but they should repeat the characteristic form, line, color, texture and pattern at a scale so as to not appear evident (U.S. Forest Service 1995). The overall goal of this Forest Service visual quality standard is for land use activities to blend substantially into the landscape and appear less noticeable. Because Forest Service authority does not extend to private land, this standard is advisory for the Imnaha Final Rearing Facility site.

The following paragraphs provide brief summaries of local and federal visual quality policies that are pertinent at each of the sites.

Lookingglass Hatchery — The Union County Comprehensive Land Plan outlines a series of goals related to visual resources. Guidance includes conserving open space and protecting natural, cultural, historical and scenic resources. The Plan stipulates that the following concerns be taken into account to protect visual attractiveness: 1) maintaining vegetative cover wherever practical, 2) using vegetation or other site obscuring methods to screen unsightly uses and 3) siting developments to be compatible with surrounding area uses, and that the natural characteristics of the location be recognized (Union County 1984). The county zoning ordinance provides physical development standards including minimum building setbacks and siting requirements to avoid building on steep slopes (Union County 1983).

Lostine Adult Collection Facility and Lostine River Hatchery — According to the Wallowa County Comprehensive Land Use Plan, the intent of the Exclusive Farm Use designation is to preserve and maintain agricultural land for farm use. The plan provides for protecting the rural character and open space activities of agricultural uses by preserving “the scenic attractiveness and living conditions desirable to farm families and other county residents” (Wallowa County 1988a). The Wallowa County Land Development Ordinance includes Development Standards to address minimum lot size and building setbacks with respect to roadways, streams and rivers (Wallowa County 1988b).

Imnaha Final Rearing Facility — In addition to the policies summarized for the two Lostine sites, the Timber Grazing designation also applies to the Imnaha Final Rearing Facility site. Siting requirements for Timber Grazing development include minimum setbacks from adjoining properties, clustering near or among existing structures and siting buildings close to existing roads (Wallowa County 1988b).

Imnaha Satellite Facility — This site lies within an area designated Timber/Commercial in the Comprehensive Land Use Plan, a zone intended to conserve forestlands. The Wallowa County Land Development Ordinance development standards require that buildings be situated close to existing roads, and that development generally be sited to minimize the amount of forestlands used for access roads, service corridors, and structures. However, as a federal site, local regulations do not apply.

The Imnaha Satellite Facility is located on Forest Service land, within the boundaries of the Wallowa-Whitman National Forest and is therefore subject to the Forest Plan policies. The Forest Service has determined that the facility site vicinity has a “retention” VQO. The retention standard provides for “natural-appearing landscape where management activities are not visually evident.” Additionally, the Hells Canyon Comprehensive Management Plan, incorporated into the Wallowa-Whitman National Forest Land and Resource Management Plan, includes a goal “to protect and enhance the special values of those rivers or river segments which are part of the National Wild and Scenic Rivers System.”

3.9.2 Evaluation Criteria

The visual impact assessment was based on evaluating the changes to the existing visual resources that would result from construction and operation of the proposed facilities. These changes were assessed, in part, by evaluating the “after” views provided by the computer-generated visual simulations and comparing them to the existing visual environment. Consideration was given to the following factors in determining the extent and implications of the visual changes:

- Anticipated extent of project visibility and the expected level of visual contrast.
- Relative numbers of viewers and their activities.
- View duration.
- Extent to which the affected environment contains visual resources that have been designated in plans and policies for protection or special recognition.

Particular consideration was given to effects on landscapes visible in the foreground from public roadways and residential areas. A visual impact would be characterized by noticeable changes in the existing visual character or quality of the **viewshed**. An adverse impact could occur if project facilities appeared prominent when seen by viewers considered to be highly sensitive to change and if it contrasted strongly with the existing landscape setting in terms of scale, form, or color. Where appropriate and feasible, mitigation measures could reduce the expected level of adverse impacts.

3.9.3 Consequences of the Proposed Action

The proposed development would alter the appearance of all five sites but would not substantially alter the existing visual character or quality of the viewsheds as seen by the public. Aesthetic measures have been included in the Proposed Action to reduce the level of anticipated visual effect. For each site except Lookingglass Hatchery, computer-generated visual simulations are presented to illustrate “before” and “after” conditions at the Proposed Action sites. No simulations were necessary at Lookingglass Hatchery because of the limited nature of the modifications to this established and relatively isolated facility.

The analysis of visual effects of the Proposed Action is based on field observations and review of the following information: local planning documents; project maps, drawings and technical data; aerial and ground level photographs of the project area; and computer-generated visual simulations. Site reconnaissance was conducted in August 2002 to observe the project area, to take representative photographs of existing visual conditions and to identify key public views appropriate for simulation. The visual simulations were based on project data provided by Montgomery Watson Harza project design engineers and produced using computer modeling and rendering techniques. The simulations (Figures 3.9-6 through 3.9-10) illustrate the scale, location and conceptual appearance of proposed facility features at four of the sites as seen from five representative public viewing locations:

- 1.) Lostine Adult Collection Facility – View from Lostine River Road (Figure 3.9-6).
- 2.) Lostine River Hatchery – View from Granger Street (Figure 3.9-7).
- 3.) Lostine River Hatchery Intake – View from the Lostine River Road Bridge (Figure 3.9-8).
- 4.) Imnaha Final Rearing Facility – View from the Upper Imnaha River Road (Figure 3.9-9).
- 5.) Imnaha Satellite Facility – View from the Upper Imnaha River Road (Figure 3.9-10).

3.9.3.1 Lookingglass Hatchery

Changes in the appearance of the Lookingglass Hatchery site (Figure 2-2) would be within the existing hatchery administrative site. Many of these modifications would involve changes to the interior of existing structures. The proposed modifications that would affect the site’s outward appearance include a proposed 6-bay garage building, minor modifications to the existing fish production building, and the addition of three new raceways. Minor amounts of excavation would occur in conjunction with construction.

The proposed modifications would not be very noticeable and would not substantially alter the existing visual character of the Lookingglass Hatchery site. The site is generally not within public view except to hatchery visitors, so modifications would not affect the area’s overall visual character. No inconsistencies with Union County’s Comprehensive Land Plan related to visual quality are apparent.

3.9.3.2 Lostine Adult Collection Facility

Changes in the appearance of the Lostine Adult Collection Facility site (Figure 2-3) would include partial removal of the existing concrete fish ladder and replacement with a new concrete fish ladder and weir structure. Riprap would also be installed on both sides of the riverbank south (upstream) of the new facility. The existing bridge would be replaced. Grading and vegetation removal would occur at the construction staging area and along the riverbank in the vicinity of the fish ladder and bridge. Figure 3.9-6 shows a “before” view and an “after” simulated view of the Lostine Adult Collection Facility site as seen from the Lostine River Road.

The reconstructed fish ladder would be partially, and momentarily, visible to northbound travelers on the country road. Other proposed facility components including the weir structure, parking area, and riprap would generally be screened from public view by existing vegetation along the roadway. The bridge replacement would not be noticed by most motorists. The anticipated visual effects associated with the Lostine Adult Collection Facility modifications would be low given the limited visibility of project components, the brief duration of affected views, the low number of affected viewers, and the fact that the changes would not substantially alter the area’s existing visual character. No inconsistencies with the Wallowa County Comprehensive Land Use Plan relative to visual quality are apparent.

3.9.3.3 Lostine River Hatchery

The appearance of the Lostine River Hatchery site would change as new structures and hatchery equipment are built in an area characterized by rural residential subdivisions and confined-area grazing activities. The new facilities include a wood-sided single family residence, a wood-sided operations building, holding ponds and tanks, a concrete outfall with gravel parking area, a concrete-block incubation building, and a headbox building (Figure 2-4). A new concrete intake structure would also be located to the south near the Lostine River Road bridge (Figure 2-5). In general, the wood-sided buildings, colors and materials would be consistent with other development in the vicinity. Grading and vegetation removal including approximately 20 fir, spruce and aspen trees, would occur on about one acre of land. Site design and layout would aim to minimize tree removal. The proposed facility includes planting a row of Douglas-firs along a portion of the site’s southern perimeter near the operations building. Tree planting is also proposed between the headbox building and residence and in other strategic places within the site, including along the top of the bank located west of the facility.

Figures 3.9-7 and 3.9-8 illustrate “before” and “after” views of the Lostine River Hatchery facilities as seen from Granger Road and the Lostine River Road bridge. The proposed hatchery operations building and incubation building would be visible from Granger Road, the access road to the site (figure 3.9-7). The other proposed facility components including the headbox, raceways, parking area and outfall structure would generally not be seen by the public traveling along the Lostine River Road due to screening provided by existing and proposed vegetation, but would be visible from residences within the subdivision.

The intake would include a new concrete fish ladder and intake structure topped with a small wood-sided building. A concrete weir structure would be constructed across the river at this location. During some periods the weir would be in a more noticeable raised position with water spilling over the top and a pool of water created upstream. The simulation also shows the removal of a small group of conifer trees on the riverbank. The simulation view depicted in Figure 3.9-8 would be seen by northbound roadway travelers for a few seconds at the river crossing. Except for a relatively brief glimpse, southbound travelers would not generally see the intake.

The anticipated level of visual impact associated with the Lostine River Hatchery would be relatively low due to the limited visibility of project components, the brief duration of affected views and the low number of affected viewers. The project would be visible to some nearby residents.

To minimize visual impacts to residents, additional conifer trees would be planted along the east side of the site and south of the operations building to provide visual screening. All lighting would be directed on-site and outdoor lighting would generally be directed downward. Non-glare fixtures would be specified for outdoor lighting. Light fixtures would be installed and buildings designed to shield direct views of the lights.

No inconsistencies with the Wallowa County Comprehensive Land Use Plan relative to visual quality or the exclusive farm use designation are apparent. Adherence to Wallowa County Land Development Ordinance Development Standards relative to visual concerns would be controlled by building permits.

3.9.3.4 Imnaha Final Rearing Facility

The Imnaha Final Rearing Facility (Figure 2-6) would include three new buildings – a storage/shop building, a single-family residence, and a bunkhouse. These buildings would be wood-sided and located as far from the river as possible within the relatively level portion of the site. Additional facility components would include ten concrete raceways (long rectangular ponds), a concrete intake structure and a concrete outfall, and a cleaning waste basin. The existing access bridge across the Imnaha River would be relocated about 200 feet upstream. Project construction would involve clearing about six acres of pasture land and filling the northern section of the site up to three feet to raise the new facilities above the 100-year flood level. Most of the riparian vegetation would be retained and riparian vegetation would be replanted in the area where the existing bridge would be removed and where additional screening is desired.

Figure 3.9-9 shows “before” and “after” views of the Imnaha Final Rearing Facility site as seen from Imnaha River Road looking south. As shown in the visual simulation, the storage building, fill bank, cleaning waste basin and relocation of the existing bridge would be partially visible from this viewpoint. The new facilities would generally be sited within the existing pasture and located to take advantage of screening provided by existing large woody vegetation. Due to vegetation screening, the facilities would be visible to the public intermittently and for a brief duration from limited sections of the roadway. The relocated bridge would be visible from the road and would be similar to the existing bridge in appearance and degree of visibility.

Although the site is located within a Wild and Scenic River corridor with a “retention” VQO, the designation does not apply to privately owned lands (U.S. Forest Service 1993a). However, most of the on-site screening vegetation is being retained along the Imnaha River and an informal planting of native trees and shrubs would be strategically planted at the site, along the south side of the Imnaha River Road to screen facilities from roadway views. The buildings would exhibit a simple style, consistent with other buildings in the vicinity (*i.e.*, not starkly different). Exterior colors and materials would be chosen to blend with the surrounding natural landscape. All lighting would be directed on-site. Outdoor lighting would generally be directed downward.

No inconsistencies with the Wallowa County Comprehensive Land Use Plan relative to visual quality are apparent. Adherence to Wallowa County Land Development Ordinance Development Standards relative to visual concerns would be controlled by building permits.

3.9.3.5 Imnaha Satellite Facility

The Imnaha Satellite Facility (Figure 2-7) modifications would include installing a new fish barrier across the river to replace an existing diversion weir, installing a new fish ladder next to the existing fish ladder,

enlarging the fish holding area, constructing a new settling basin, and modifying the existing intake structure. The existing spawning shelter would also be enlarged to accommodate a new incubation room. New powerlines would be buried in the Imnaha River Road.

Figure 3.9-10 shows a “before” and an “after” view of the Imnaha Satellite Facility site as seen from Imnaha River Road. As shown in the simulation, the new fish ladder and addition to the spawning shelter would be apparent but not particularly noticeable from the roadway. These effects would only be visible to the public from limited places along Imnaha River Road immediately adjacent to the site and from the visitor parking area. In general, as seen by the public, the facility’s appearance with proposed changes would be very similar to its current appearance, except during and immediately after construction. Given the site’s location within a Wild and Scenic River corridor and within a National Forest area with “retention” VQOs, the anticipated visual effects could represent an adverse visual effect. However, because views of the facility that would occur after that Proposed Action would not be substantially different from existing views, and because the existing facility is somewhat of a public attraction (it is open to visitors), the amount of change in visual quality is expected to be minor.

3.9.4 Cumulative Impacts

As described in Section 3.2.4 of this EIS, other projects in the vicinity of Proposed Action sites include renovation of existing and construction of new private residences, rehabilitation of Wallowa Lake Dam, numerous habitat restoration projects, salmon recovery projects, watershed management activities, and the Nez Perce Tribal Hatchery Program. These projects involve primarily isolated or screened views, and would not result in major long-term changes to visually sensitive resources. These projects, when considered together with the Proposed Action, are not expected to result in substantial adverse visual cumulative impacts.

3.9.5 Consequences of Taking No Action

The No Action Alternative would result in no changes to scenes or views at any of the proposed project sites.

3.10 Land Use, Recreation and Transportation

3.10.1 Affected Environment

The five proposed project sites are located within the Grande Ronde and Imnaha subbasins in Northeast Oregon, within Wallowa and Union counties (Figure 1-1). The proposed site on Lookingglass Creek is located in Union County. The proposed sites on the Lostine and Imnaha Rivers are located in Wallowa County. Wallowa County is located in the far northeast corner of Oregon, and is bordered by the states of Washington and Idaho. Wallowa County is home to the HCRNA, Wallowa Lake, and the Eagle Cap Wilderness.

Northeast Oregon is rural and sparsely settled. The local economy depends on agriculture, timber and tourism (Oregon Economic and Community Development Department 2001). Agricultural activities consist primarily of ranching and dryland farming. Timber is harvested from public and private forestlands. Lumber mills and related manufacturing are located in several towns in the area. Outdoor recreation and tourism draw visitors to the region and support a variety of retail and service businesses.

Most of the sites are subject to county land use regulations, which are discussed below as they apply. The rivers support chinook salmon and may be designated by the Oregon Division of State Lands (ODSL) as “Essential Habitat Streams.” As such, proposed construction activities would require a “removal-fill permit” from that state agency as well as a CWA Section 404 Permit from the USACE. Each site is at least partly

located within the 100-year floodplain of the adjacent river. Neither the Federal Emergency Management Agency nor the respective county governments, however, regulate floodplain development in the vicinity of the sites. None of the sites have been designated as prime farmland by the Natural Resources Conservation Service. Chapter 4 and Table 4-1 of this EIS contain more information about permits and approvals.

3.10.1.1. Lookingglass Hatchery

Lookingglass Hatchery (Figure 2-2) is located on Lookingglass Creek, approximately 16 miles north of Elgin, Oregon within a narrow canyon, 2.2 miles upstream from the confluence with the Grande Ronde River. Lookingglass Hatchery was built on land originally owned by Boise Cascade Corporation. Adjacent land is owned and maintained by Boise Cascade and managed for timber production. The hatchery site is accessed via a public paved road that parallels Lookingglass Creek and ends at Lookingglass Hatchery.

The Union County Comprehensive Land Use Plan provides guidelines for facility development and other considerations related to county growth. The basic purposes of the Union County Comprehensive Land Use Plan are to: 1) protect the custom, culture and community stability of the county; 2) maintain the agricultural and timber basis of the county; 3) accommodate anticipated development; and 4) make provisions for those uses which may be needed by the county, but which may have undesirable characteristics such as noise, smoke, and odor (Union County 1984).

The Lookingglass Hatchery is located within the A-4 Timber-Grazing Zone. The A-4 Timber-Grazing Zone is intended to conserve and maintain agriculture and forest land throughout the county. Fish hatcheries and associated dwellings are not specifically identified as a use in the Union County Zoning Ordinance (Union County 1983). However, ORS 215.755(3) identifies caretaker residences for public parks and public fish hatcheries as a Conditional Use.

The Grande Ronde River is designated as Wild and Scenic several miles downstream of the site. Numerous outdoor recreational opportunities exist in the vicinity, including activities within the Umatilla National Forest to the north and west. Recreational activities there include sightseeing, developed and dispersed camping, picnicking, hunting, fishing, bicycling, skiing (both cross-country and downhill), wildlife viewing, hiking and backpacking.

3.10.1.2 Lostine Adult Collection Facility

The Lostine Adult Collection Facility site (Figure 2-3) is located adjacent to a private trout farm, in an area of farms and pastures, one mile south of the town of Lostine. The proposed site includes an existing fish ladder and an irrigation diversion located on the east bank of the river. The town of Lostine owns the diversion and retains the water right, although the diversion is not currently in use. The site is accessed via the Lostine River Road (County Road 551), which is paved and in good condition, then via a private road and bridge. Traffic volumes are low on Lostine River Road.

The Wallowa County Comprehensive Land Use Plan provides guidelines for facility development at the Lostine Adult Collection Facility. The basic purposes of the Wallowa County Comprehensive Plan are to: 1) protect the custom, culture, and community stability of the county; 2) maintain the agricultural and timber basis of the county; 3) accommodate anticipated development; and 4) make provisions for those uses which may be needed by the county, but which may have undesirable characteristics such as noise, smoke and odor (Wallowa County 1988a). More specific guidance is provided by the Wallowa County Land Development Ordinance (Wallowa County 1988b).

The Lostine Adult Collection Facility is primarily zoned Exclusive Farm Use or EFU. This designation is intended to provide areas for continuation of existing commercial agricultural activities. The EFU zone only

allows those new uses that are compatible with agricultural activities. The propagation, cultivation, maintenance, and harvesting of aquatic species are conditionally permitted pursuant to the County's Public Hearing Review process. A small portion of the site is also zoned Existing Lot which allows for non-farm, non-forest residential use in areas with lots too small for farm and/or forest use (Jones 2002, personal communication).

The Lostine River is designated Wild and Scenic (Section 3.7 of this EIS) above the Wallowa-Whitman National Forest boundary approximately six miles upstream of the Lostine Adult Collection Facility site. The Lostine River area is popular for hiking, camping, backpacking, horseback riding, and fishing. Numerous outdoor recreational opportunities exist within the nearby Wallowa-Whitman National Forest.

3.10.1.3 Lostine River Hatchery

The proposed Lostine River Hatchery site (Figure 2-4) is located about six miles upstream (south) of the town of Lostine, in the foothills of the Wallowa Mountains, in an area of scattered farms, ranches and residences. The site is accessed via Granger Road, an unpaved road providing local access to a small rural residential subdivision. The site is largely undeveloped except for a small house and outbuildings at the south end. Historically, the property was used for cattle and horse grazing. The south portion of the site has been logged resulting in a relatively open grassy area. The rest of the site is forested. An existing 16-foot wide gravel access road extends from Granger Road through the site to access the temporary acclimation site located to the north.

The Lostine River is designated Wild and Scenic (Section 3.7 of this EIS) above the Wallowa-Whitman National Forest boundary approximately one mile upstream of the Lostine River Hatchery site. Lostine River Road parallels the river and provides major trailhead access to the Eagle Cap Wilderness. The Lostine River area, especially lands within the Wallowa-Whitman National Forest and the Eagle Cap Wilderness, is popular for hiking, camping, backpacking, cross-country skiing, horseback riding, and fishing. Forest Service facilities accessed from the Lostine River Road include the Williamson, Shady, and Two Pan campgrounds and the Pole Bridge and French Camp picnic areas. The proposed hatchery site is not available for public recreation use and does not appear to be used informally.

The Wallowa County Comprehensive Land Use Plan (Wallowa County 1988a), as outlined in Section 3.10.1.2, provides guidelines for facility development at the Lostine River Hatchery. More specific guidance is provided by the Wallowa County Land Development Ordinance (Wallowa County 1988b).

The Lostine River Hatchery is primarily zoned Exclusive Farm Use or EFU. This designation is intended to provide areas for continuation of existing commercial agricultural activities. The EFU zone only allows those new uses that are compatible with agricultural activities. The propagation, cultivation, maintenance, and harvesting of aquatic species are conditionally permitted pursuant to the County's Public Hearing Review process. A small portion of the site is also zoned Existing Lot which allows for non-farm, non forest residential use in areas with lots too small for farm and/or forest use (Jones 2002, personal communication).

3.10.1.4 Imnaha Final Rearing Facility

The proposed Imnaha Final Rearing Facility site (Figure 2-6) is located about five miles south (upstream) of the town of Imnaha, Oregon. Joseph, Oregon is the closest city and is located approximately 40 miles away. The proposed site is privately owned pasture, consisting of a large meadow located between steep canyon walls to the west and the Imnaha River to the east. Evidence of an old homestead is apparent on the south end of the meadow. Mature willows and shrubs grow along the riverbank. The Imnaha Final Rearing site is located within both the Imnaha Wild and Scenic River corridor (Section 3.7 of this EIS) and the HCNRA.

However, the proposed site is private property. It is not available for public access or recreation use and does not appear to be used informally.

The Wallowa County Comprehensive Land Use Plan (Wallowa County 1988a), as outlined in Section 3.10.1.2, provides guidelines for facility development at the Imnaha Final Rearing Facility. More specific guidance is provided by the Wallowa County Land Development Ordinance (Wallowa County 1988b).

The Imnaha Final Rearing Facility and surrounding lands are zoned a combination of EFU and Timberland-Grazing or T/G (Jones 2002, personal communication). The EFU zone provides areas for continuation of existing commercial agricultural activities. The EFU zone only allows those new uses that are compatible with agricultural activities. The propagation, cultivation, maintenance, and harvesting of aquatic species are conditionally permitted pursuant to the County's Public Hearing Review process. The T/G zone consists of areas for commercial farm and forest activities and permits the establishment of new uses that are compatible with agricultural and forest activities. Fish hatcheries and associated residences are permitted within the T/G zone.

The site is accessed via the Upper Imnaha River Road (County Road 551) and a steel panel bridge across the river. The Upper Imnaha River Road parallels the river most of the way to the Imnaha Satellite Facility, becoming Forest Service Road 3955. The Upper Imnaha River Road is mostly unpaved, but in generally good condition. Traffic volumes are low. The road mainly provides local access to scattered ranches and residences and some access for hiking, camping, horseback riding and fishing within the Wallowa-Whitman National Forest, including access to HCNRA, Hells Canyon Wilderness, and other destinations. Trucks transporting livestock and ranch supplies are not uncommon.

3.10.1.5 Imnaha Satellite Facility

The Imnaha Satellite Facility (Figure 2-8) is operated as a satellite of the Lookingglass Hatchery and is located about 29 miles south (upstream) of the town of the Imnaha, Oregon. The Imnaha Satellite Facility is located within the Wallowa-Whitman National Forest on land administered by the Forest Service. The existing facility operates under a Forest Service special use permit issued to the USFWS.

The Imnaha Satellite Facility and surrounding lands are designated Timber/Commercial (T/C) a zone similar to T/G. However, County regulations do not apply since the Imnaha Satellite Facility is located on federal lands. The Imnaha Satellite Facility is located within both the Imnaha Wild and Scenic River corridor (Section 3.7 of this EIS) and the HCNRA and is subject to provisions of those specific plans and the standards and guidelines of the Wallowa-Whitman National Forest Land and Resource Management Plan (U.S. Forest Service 1990).

Access to the facility is provided by Forest Service Road 3955, which is closed by snow during the winter. Most traffic on this gravel road is recreational though volumes are low. Through-traffic tends to use the paved Wallowa Mountain Loop Highway between Joseph and Halfway, Oregon, which passes within a couple miles of the site. Recreation visitors travel past or near the site on their way to trailheads further up the Imnaha River. These trailheads access lands within the Wallowa-Whitman National Forest, HCNRA and the Eagle Cap Wilderness used for hiking, backpacking, cross-country skiing, horseback riding, and fishing. Numerous established campgrounds are also located near by.

3.10.2 Evaluation Criteria

The following were used to evaluate potential impacts to land use, recreation and transportation:

- Land Use – compatibility with zoning, permitted land use, or management plan direction.

- Recreation – change to a specific recreation opportunity, resource, access or experience.
- Transportation – change to traffic volume, pattern or flow or road conditions.

3.10.3 Consequences of Proposed Action

3.10.3.1 Lookingglass Hatchery

The proposed modifications to the existing Lookingglass Hatchery would be a conditionally permitted land use under the Union County zoning regulations. The Lookingglass Hatchery is an existing use and would continue to be compatible with the surrounding timber uses.

Lookingglass Hatchery would continue to remain open for visitors. The modifications would not cause losses of specific recreation opportunities or resources, and would not diminish recreation access. Over the long run, the Proposed Action would potentially enhance recreational opportunities if chinook stocks were recovered sufficiently to enhance viewing and salmon fishing.

With the exception of a temporary increase in traffic during construction, traffic is not expected to change noticeably at Lookingglass Hatchery. Given the low daily traffic volumes in the vicinity of the site, the short duration of construction, and the low numbers of trips related to hatchery operations, the Proposed Action would cause only limited transportation impacts.

3.10.3.2 Lostine Adult Collection Facility

The proposed Lostine Adult Collection Facility would be a conditionally permitted land use under the Wallowa County zoning regulations and would be subject to the County's Hearing Review process. The proposed facility would be compatible with surrounding agricultural uses and nearby constructed features such as the irrigation diversion, fish ladder and trout farm. As intended under the EFU zone, the facility would not conflict with agricultural uses.

The proposed Lostine Adult Collection Facility site is not available for public recreation use and does not appear to be used informally. Constructing and operating the facility would not cause losses of specific recreation opportunities or resources, and would not diminish recreation access. Over the long run, the Proposed Action would potentially enhance recreational opportunities if chinook stocks were recovered sufficiently to enhance viewing and salmon fishing.

The Proposed Action would affect existing roadways and traffic levels by temporarily increasing traffic during construction and slightly increasing traffic once the Lostine Adult Construction Facility becomes operational. The facility would see limited, seasonal use consistent with surrounding uses. Given the low daily traffic volumes in the vicinity of the site, the short duration of construction, and the low numbers of trips related to operations, the Proposed Action would cause only limited transportation impacts. The facility would improve access for the property owner, by replacing the bridge and providing parking and a turnaround.

3.10.3.3 Lostine River Hatchery

The proposed Lostine River Hatchery would be a conditionally permitted land use under the Wallowa County zoning regulations and would be subject to the County's Hearing Review process. The proposed hatchery would be a new land use at this location and would introduce a change adjacent to what is primarily a rural residential subdivision. The proposed facility, however, would be generally compatible with the surrounding agricultural and residential uses. In addition, the facilities incorporate design and operation measures to address issues such as aesthetics, air quality, and noise that are discussed in Sections 3.9, 3.12 and 3.13,

respectively, of this EIS. Once operational, the level of activity at the hatchery would be limited and consistent with the nearby residential use.

The Lostine River Hatchery is not available for public recreation use and does not appear to be used informally. Constructing and operating the hatchery would not cause losses of specific recreation opportunities or resources, and would not diminish recreation access. Over the long run, the Proposed Action would potentially enhance recreational opportunities if chinook stocks were recovered sufficiently to enhance viewing and salmon fishing.

The Proposed Action would affect existing roadways and traffic levels by temporarily increasing traffic during construction and slightly increasing traffic once the Lostine River Hatchery becomes operational. The Lostine River Hatchery would generate traffic from the on-site residents, one local employee and a weekly supply trip. For about three weeks in January, up to five additional round-trips per day would be generated by temporary workers hired to mark fish at the hatchery. The project includes watering Granger Road as necessary to reduce dust and paving the road following construction, which would permanently reduce dust and enhance local residential access. Section 3.12.3 of this EIS discusses potential air quality effects. Given the low daily traffic volumes in the vicinity of the site, the short duration of construction, the low numbers of trips related to operations, and the planned road improvements, the Proposed Action would cause only limited transportation impacts.

3.10.3.4 Imnaha Final Rearing Facility

The proposed Imnaha Final Rearing Facility would be a conditionally permitted land use under the Wallowa County zoning regulations and would be subject to the County's Hearing Review process. The proposed facility would be generally compatible with surrounding agricultural and residential uses and the adjacent Upper Imnaha River Road. The facility would be a new land use at this location and would convert pasture along the river to fish production. Once operational, the level of activity at the facility would be limited and compatible with the residence and road across the river. Much of the facility would be screened from view by existing riparian vegetation, which would be retained. Design considerations discussed under Section 3.9 of this EIS would enhance compatibility and maintain visual integrity.

The Imnaha Final Rearing Facility is not available for public recreation use and does not appear to be used informally. The proposed facility would be located on private land within the Wild and Scenic River Corridor, which is designated for recreation. The provisions of the Imnaha River Wild and Scenic River Management Plan serve only as guidelines for private property (U.S. Forest Service 1993a). Section 3.7.3 of this EIS provides additional discussion of potential impacts to Wild and Scenic Rivers. Over the long run, the Proposed Action would potentially enhance recreational opportunities if chinook stocks were recovered sufficiently to enhance viewing and salmon fishing.

The Proposed Action would affect existing roadways and traffic levels by temporarily increasing traffic during construction and slightly increasing traffic once the Imnaha Final Rearing Facility becomes operational. The Imnaha Final Rearing Facility would generate a few daily trips associated with the residence and bunkhouse, but the number of trips would be similar to those generated by nearby residential and agricultural uses. Potential traffic hazards at the Imnaha Final Rearing Facility would be addressed by relocating the bridge and constructing a turning lane on the Upper Imnaha River Road to increase sight distance, allow passing and accommodate a wider turning radius for fish hauling trucks accessing the site. Given the low daily traffic volumes in the vicinity of the site, the short duration of construction, the low numbers of trips related to operations, and the planned road and bridge improvements, the Proposed Action would cause only limited transportation impacts.

3.10.3.5 Imnaha Satellite Facility

The existing Imnaha Satellite Facility is located on Forest Service land, within the boundaries of the Wallowa-Whitman National Forest and is subject to the goals and policies of the Forest Plan, the HCNRA Comprehensive Management Plan Draft EIS (U.S. Forest Service 1999), and the Imnaha River Wild and Scenic River Management Plan (U.S. Forest Service 1993a). The existing facility operates under a Special Use Permit from the Forest Service, which would be amended to allow the modifications in a manner consistent with the Forest Plan. A separate Special Use Permit would be required for the new powerline that would run underground about six miles along the Upper Imnaha River Road.

The Imnaha Satellite Facility is currently open to public visitors and would remain so with the modifications. The Imnaha Satellite Facility is located within the Imnaha Wild and Scenic River corridor, which is designated for recreation, and would be required to comply with the Imnaha River Wild and Scenic River Management Plan (U.S. Forest Service 1993a). Section 3.7.3 of this EIS provides additional discussion of potential impacts to Wild and Scenic Rivers. The Proposed Action would not cause losses of specific recreation opportunities or resources, and would not diminish recreation access. Over the long run, the Proposed Action would potentially enhance recreational opportunities if chinook stocks were recovered sufficiently to enhance viewing and salmon fishing.

With the exception of a temporary increase in traffic during construction, traffic is not expected to change noticeably at the Imnaha Satellite Facility. Because of snow, operation and access would likely continue to be seasonal. Given the low daily traffic volumes in the vicinity of the site, the short duration of construction, and the low numbers of trips related to hatchery operations, the Proposed Action would cause only limited transportation impacts.

3.10.4 Cumulative Impacts

As described in Section 3.2.4 of this EIS, other projects in the vicinity of the Proposed Action sites include renovation of existing and construction of new private residences, rehabilitation of Wallowa Lake Dam, numerous habitat restoration projects, salmon recovery projects, watershed management activities, and the Nez Perce Tribal Hatchery Program. During construction, some of these projects may have temporary minor adverse effects to land use, recreation and transportation. However, several habitat and salmon recovery projects would also result in long-term beneficial effects on land use and recreation. These projects, when considered together with the Proposed Action are not expected to result in substantial adverse cumulative impacts to land use, recreation or transportation.

3.10.5 Consequences of Taking No Action

No changes in land use, recreation or transportation would occur under the No Action Alternative.

3.11 Socioeconomics

3.11.1 Affected Environment

3.11.1.1 Population, Employment and Income

Wallowa and Union Counties, Oregon are defined as the area of potential socioeconomic effect since it is likely that impacts of the project would have effects beyond the communities located nearest to project sites. Wallowa and Union Counties have experienced very little population change since the 1980s while the state's

population as a whole grew by 32% (see Table 3.11-1). In general, the area's population is older, white and married (in the year 2000, the median age of residents in Wallowa and Union Counties was 44.4 and 37.7, respectively). Within Wallowa and Union Counties, education, retail trade, forestry and agriculture, and manufacturing constitute over half of all employment. Time of year, rather than overall economic conditions of Oregon, influence employment opportunities in the two county region and, in general, the numbers of jobs have been increasing in Union County, but decreasing in Wallowa County (Oregon Employment Department 2002). Unemployment is generally below the national and state average for both counties (see Table 3.11-2). Per capita income levels for the year 2000 were substantially lower for both counties compared to the state as a whole. Wallowa County had a year 2000 per capita income of \$17,276, higher than the year 2000 per capita income of \$16,907 for Union County, but still below the \$20,940 figure for the state (U.S. Census Bureau 2001).

Table 3.11-1. General Population of Wallowa and Union Counties 1980 - 2001.

	1980	1990	2000	2001	Percent Change 1980-2001
Wallowa County	7,273	6,911	7,226	7,100	-2%
Union County	23,921	23,598	24,530	24,550	3%
County Totals	31,194	30,509	31,756	31,650	1.5%
Oregon Totals	2,633,105	2,842,321	3,421,399	3,471,700	32%
Sources: U.S. Census Bureau 1980, 1990, 2001; Portland State University, 2001.					

Table 3.11-2. Unemployment Rates in the Area of Potential Effect for the Proposed Action, 2001 - 2002.

	Unemployment Rate		
	August 2001	July 2002	August 2002
Wallowa County	5.5%	5.4%	5.0%
Union County	4.2%	4.2%	4.2%
Oregon	6.2%	7.1%	6.6%
<i>Seasonally Adjusted</i>	6.7%	7.3%	7.0%
United States	4.9%	6.0%	5.7%
<i>Seasonally Adjusted</i>	4.9%	5.9%	5.7%
Source: Oregon Labor Market Information System 2002.			

3.11.1.2 Environmental Justice

Sites associated with the Proposed Action are located within a geographic region that is classified as distressed by the State of Oregon Economic and Community Development Department (Oregon Economic and Community Development Department 2001). All of Wallowa County is considered by the department to

be distressed. Although Union County as a whole is not classified as distressed, both the cities of Elgin and Union are classified as distressed.

This distressed designation is a result of a presidential order which directed federal agencies to develop environmental justice strategies that identified and addressed disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low income populations (Executive Order 12898, February 11, 1994.). In the memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President specifically recognized the importance of using procedures under NEPA to identify and address environmental justice concerns.

In response to Executive Order 12898, the EPA adopted a policy which defines environmental justice as: “The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people, including racial, ethnic, or economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies” (U.S. EPA 1998).

The 1997 Oregon State Senate Bill 932 directed the State of Oregon Economic and Community Development Department to "give priority to counties, cities, communities or other geographic areas that are designated as distressed areas by the department, based on indicators of economic distress or dislocation, including but not limited to unemployment, poverty and job loss."

3.11.2 Evaluation Criteria

The following were used to evaluate potential socioeconomic impacts:

- Changes to employment or general quality of life for minority or low-income populations or other social groups/demographics.
- Disproportionate increases in air pollution, water pollution, noise levels, hazardous materials near minority or low-income populations or distressed economic groups in Wallowa or Union Counties.
- Changes to employment opportunities.
- Changes to cost of living.
- Changes to regional economic productivity.
- Changes to county tax revenues or services.
- Changes to BPA rate payers.

3.11.3 Consequences of the Proposed Action

Implementing the Proposed Action would not result in any group of people in the area, including racial, ethnic or economic groups bearing a disproportionately high share of population or employment impacts, quality of living changes or environmental consequences.

The Proposed Action would not result in measurable short- or long-term impacts to local population conditions. Most of the new full-time, seasonal and temporary workers would likely come from the local area as would most construction contractors and employees. A few very specialized labor requirements may be met with workers from elsewhere. If most contractors and workers came from outside the region, the increase to area population may be noticeable given the slow growth or decline in population over the past ten years.

Implementation of the Proposed Action would result in some additional employment opportunities in Wallowa and Union Counties. The construction phase of the Proposed Action would provide temporary employment for several dozen construction workers most of which would probably come from the local labor pool. Operation of the various proposed hatchery facilities would result in about three additional full-time employees (possibly from outside the area) and about ten additional seasonal employees (probably from within the local area). This relatively small increase in full-time and seasonal employment would result in only minimal increase in demand for support industries or government services. City tax revenues or expenses are not expected to change noticeably nor would overall regional economic productivity or cost of living be measurably changed. The direct impacts, while small, are expected to be beneficial in terms some increased employment and increased demand for goods and services.

The rates BPA charges its customers for power would not change as a result of implementing the Proposed Action. BPA funding for project improvements is authorized by law to mitigate for fish and wildlife impacts due to development of hydropower projects in the Pacific Northwest. This project would be one of many funded annually as part of an on-going program.

Implementation of the Proposed Action would result in an increase in the importance of the fisheries sector within the local economies of Wallowa and Union Counties. This could result in a slight increase in recreation and tourist activity within the two county area, resulting in benefits to both social culture and regional economic productivity.

3.11.4 Cumulative Impacts

Projects in Northeast Oregon that create new jobs and improve fisheries could combine with this project to yield cumulative benefits to local economies, especially related to recreation and tourism.

3.11.5 Consequences of Taking No Action

The No Action Alternative would not create new jobs or any secondary benefits that could be attributed to service, support, tourism, recreation, or fishing should the salmon recovery efforts be successful.

3.12 Air Quality

3.12.1 Affected Environment

Under authority of the federal Clean Air Act of 1970, the EPA established National Ambient Air Quality Standards (NAAQS) for six pollutants, called criteria pollutants (Table 3.12-1). These include particulate matter, carbon monoxide, ozone, sulfur dioxide, lead and oxides of nitrogen.

On federal lands, EPA has responsibility for air quality management. In Oregon, the Oregon DEQ is charged with conducting air quality monitoring in various locations and implementing strategies to attain and maintain various air quality standards set by the EPA. Oregon DEQ is the regulatory authority for all but one of the

sites under consideration for development in the Proposed Action. The exception is the Imnaha Satellite Facility, which is on Forest Service land.

Generally in Northeast Oregon, in the spring, summer and fall, short-term periodic air quality degradation may occur during episodes of agricultural and forest management burning. In the winter, particularly in valley areas, emissions from wood-burning stoves may result in localized air quality degradation during temperature inversions.

During the late 1980s, areas within La Grande Urban Growth Boundary (UGB) exceeded NAAQS for PM₁₀. As a result, DEQ and the EPA designated that area as non-attainment for PM₁₀. While the area has recently demonstrated compliance with PM₁₀ standards, it has not been officially redesignated as an attainment area by EPA (Oregon DEQ 2002). No Proposed Action sites are located within the UGB. Lookingglass Hatchery, the nearest Proposed Action site, is over 30 miles away. However, particulates can travel for hundreds of miles, so, particulates generated within the UGB may influence air quality at this site.

Table 3.12-1: National Ambient Air Quality Standards.

Pollutant	Standard Value	Standard Type
Carbon Monoxide (CO)		
8-hour Average	9 ppm (10 mg/m ³)	Primary
1-hour Average	35 ppm (40 mg/m ³)	Primary
Nitrogen Dioxide (NO₂)		
Annual Arithmetic Mean	0.053 ppm (100 ug/m ³)	Primary & Secondary
42.67	North city limits of Enterprise	1,000
Ozone (O₃)		
1-hour Average	0.12 ppm (235ug/m ³)	Primary & Secondary
8-hour Average	0.08 ppm (157 ug/m ³)	Primary & Secondary
Lead (Pb)		
Quarterly Average	1.5 ug/m ³	Primary & Secondary
Particulate (PM₁₀)		
Annual Arithmetic Mean	50 ug/m ³	Primary & Secondary
24-hour Average	150 ug/m ³	Primary & Secondary
Particulate (PM 2.5)		
Annual Arithmetic Mean	15 ug/m ³	Primary & Secondary
24-hour Average	65 ug/m ³	Primary & Secondary
Sulfur Dioxide (SO₂)		
Annual Arithmetic Mean	0.30 ppm (80 ug/m ³)	Primary
24-hour Average	0.14 ppm (365 ug/m ³)	Primary
3-hour Average	0.50 ppm (1300 ug/m ³)	Secondary
Source: U.S. EPA, 2002.		

3.12.2 Evaluation Criteria

The following are used to evaluate potential air quality impacts:

- Change in the amount of particulate pollution relative to the NAAQS for PM 10 and PM 2.5.
- Change in ambient air quality relative to sensitive receptors or contribution to an existing air quality problem.

3.12.3 Consequences of the Proposed Action

Construction activities proposed at all sites would likely produce dust, resulting in temporary increased localized particulate levels. Construction vehicle exhaust could also increase particulates and carbon monoxide. These construction impacts would be localized, intermittent, and of short duration.

Construction activities associated with the proposed Lostine River Hatchery would be most likely to generate off-site dust or particulates near residences. However, the Proposed Action includes activities to control dust and particulate generation, and to prevent these substances from reaching homes and other potential receptors. These measures include: watering Granger Road and other unpaved roadways for dust abatement during dry weather, covering any stockpiled soil, and revegetating exposed areas as soon as construction is completed.

With the use of the control measures planned as part of the Proposed Action, construction activities lasting only a year or two at all sites are expected to have minor, intermittent, localized impacts that would not exceed NAAQS.

Long-term air emissions at all of the Proposed Action sites would be limited to those associated with some additional traffic, heating and cooling systems, and intermittent use of generators at the existing Lookingglass Hatchery, the Imnaha facilities and the Lostine River Hatchery. These minimal potential emissions are not expected to result in or contribute substantially to any violations of criteria pollutant standards in the region. The proposal to pave Granger Road at Lostine River Hatchery would reduce one source of road-travel related dust and particulate in the local residential subdivision.

3.12.4 Cumulative Impacts

Combined impacts to air quality from this project and ongoing and proposed activities in the area of the project sites is not anticipated to result in a substantial change to air quality.

3.12.5 Consequences of Taking No Action

The No Action Alternative would maintain current facilities and operations. No additional impacts to air quality are expected from the No Action Alternative.

3.13 Noise

3.13.1 Affected Environment

Ambient noise levels at all the project sites are typical for rural to semi-rural locations. The Lookingglass Hatchery is located at the end of a paved road that does not access any other facilities or residences. Noises from traffic, river flow, hatchery operations and hatchery residences are typical for this type of location.

The Lostine River Adult Collection Facility would be about 800 feet east of the nearest residence and about 200 feet from Lostine River Road. Road noise and some nearby farming and ranching activities are the noises typical of this area.

The proposed Lostine River Hatchery would be accessed from Granger Road, an unpaved road serving about six residences in a rural subdivision. The nearest residence is located about 250 feet southeast of the proposed hatchery garage and shop, and about 500 feet away from the other proposed hatchery

improvements. Current ambient noise levels are typical of a rural community, including traffic noise from the roadway, some noise from residences, and noise from nearby pets and livestock.

The proposed Imnaha Final Rearing Facility bridge is about 300 feet from the nearest residence. The facility residence and a shop would be about 500 feet and 750 feet, respectfully, from this residence and separated from the residence by the Upper Imnaha River Road and the Imnaha River. Road and river noise and some nearby farming and ranching activities are the sounds typical of this area.

The Imnaha Satellite Facility is set back in a forested area about 100 feet from the Upper Imnaha River Road (Forest Service Road 3995) and located over two miles from the nearest established campground. Noises from traffic, river flow, and hatchery operations (including generators) are typical of noises associated with this location.

3.13.2 Evaluation Criteria

Union and Wallowa Counties do not have local noise ordinances. Excessive noise is controlled through local nuisance ordinances and the sheriffs' office enforcement policies.

Since no local noise criteria are available, this evaluation will consider whether the construction and operation of proposed facilities may constitute a reportable "nuisance noise" call to local authorities.

3.13.3 Consequences of the Proposed Action

The highest noise levels from the Proposed Action would be associated with construction. Construction would typically occur up to 12 hours per day, five days per week except at the Lostine River Adult Collection Facility and the Lostine River Hatchery because of nearby residences. In those cases, contractors would be required to muffle equipment and limit periods of excessive noise to typical weekday hours (from 8 a.m. to 5 p.m., Monday through Friday). Typical construction noises would occur for a year or two at most sites, and would likely be bothersome to nearby residents but would not likely result in "nuisance noise" reports to local authorities though occasional complaints to construction staff would be expected. Construction supervisors and contract administrative personnel from NPT and BPA would be responsible for taking appropriate corrective action to control unnecessary noise levels.

Long-term noise levels at new facilities would result in either minor, local adverse impact or no change or a decrease in noise over existing conditions. The Proposed Action includes methods to reduce the amount of long-term noise from new facilities including siting facilities as far away from roads and residences as possible; using insulation or other noise reduction apparatus and techniques during construction; and locating noise-generating equipment (e.g. pumps, backup generators) inside buildings designed to shield noise. Improvements at the Lookingglass Hatchery may reduce long-term noise by building or improving structures for existing activities (e.g., new garages and new insulation in some existing buildings). Long-term noise would be reduced at the Imnaha Satellite Facility by replacing the existing generator with a power line (keeping the generator as a backup power supply).

The proposed Lostine River Hatchery is most likely to result in noise disturbance during both its construction and its operation, because of the proximity to several nearby residences. However, the Proposed Action would limit construction activities to between 8 a.m. and 5 p.m., five days per week, except during in-stream work windows when work could occur up to 12 hours per day, six days per week. During the facility's operation, occasional noise would result from traffic to and from the site, consisting of trips by families living on site and workers employed at the site and deliveries of supplies and/or fish transport. Intermittent noise from the hatchery residents would be typical for the area, as would occasional operational noises. Enclosing

pumps and generators within buildings would effectively muffle other noise associated with the facility's operation.

3.13.4 Cumulative Impacts

Cumulative noise levels are not expected to be substantially different from current conditions at any of the project sites.

3.13.5 Consequences of Taking No Action

No change to noise levels is expected from the No Action Alternative.

3.14 Public Health and Safety

3.14.1 Affected Environment

The proposed new facilities and facility improvements are located in rural areas of Union and Wallowa Counties, having enhanced 911 services for dispatch of emergency response for fire, police, ambulance and other emergency services. The Lookingglass Hatchery and Imnaha Satellite Facility are both outside of local, rural fire districts and dispatch of nearest available fire-fighting forces would be coordinated through the Northeast Oregon Interagency Fire Center near La Grande. Emergency fire services for the Lostine Adult Collection Facility, Lostine River Hatchery and the Imnaha Final Rearing Facility would be provided by the nearest Rural Fire District, or coordinated through the Interagency Fire Center if local forces were unable to respond.

Emergency ambulance services are available out of Elgin for the Lookingglass Hatchery and out of Enterprise for the Lostine and Imnaha facilities. Emergency medical air transport services are available through Air Life out of La Grande. Both La Grande and Enterprise have hospitals.

The State Police, Union and Wallowa County Sheriffs and federal agents police their respective jurisdictions.

3.14.2 Evaluation Criteria

The change in the need for emergency and other law enforcement, health and safety services attributable to construction, operation and maintenance of hatchery facilities is to be assessed.

3.14.3 Consequences of the Proposed Action

Activities associated with the Proposed Action may result in some additional demands for public health and safety services in the project area. Inherent to any construction is a short term increased potential for personal injury, fire, or other accidents. Long term demand for health and safety services in the region would not change measurably with the addition of three new facilities and a few staff given the overall rate of population change and development in the region. The Proposed Action includes safety and fire protection measures such as training of staff, on-site first aid and emergency preparedness kits, equipment inspections and routine maintenance, water sources and fire extinguishers in homes and other proposed facilities. Hazardous substances would be uncommon at the facilities, would be in small amounts, and would typically be used and disposed of appropriately. The new Imnaha and Lostine facilities would pose no change to public health and safety as they would not be open to public and would not contain any components that could be seen as an

off-site danger. Truck traffic and employee travel related to all the facilities would increase risk of motor vehicle accidents slightly.

3.14.4 Cumulative Impacts

No substantial cumulative impact to human health and safety or the need for emergency or law enforcement services is expected.

3.14.5 Consequences of Taking No Action

No change in public health and safety is expected from the No Action Alternative.

3.15 Short-Term Use of the Environment and the Maintenance and Enhancement of Long-Term Productivity

The Proposed action would alter the long-term productivity of soils where permanent structures or permanent modification of land would occur for locating hatchery facilities at the five proposed sites (about 10 acres total). Localized changes to plant and wildlife habitat, wetlands, hydrology and geology are expected. Most temporarily disturbed areas would be restored to naturally functioning condition through use of best management practices, vegetation reestablishment, weed control, and certain other mitigation measures described in this EIS. Ultimately, the Proposed Action would result in long-term productivity gains for ESA-listed spring/summer chinook in Northeast Oregon, which would restore an ecologically significant element to the environment and benefit many other living things, including humans.

3.16 Irreversible and Irretrievable Commitment of Resources

The Proposed Action would use nonrenewable resources such as aluminum, steel, gravel, and sand to construct facilities and the access and utilities related to them. Materials would come from a variety of outside commercial sources. The Proposed Action also would require the use of petroleum-based fuels, and incidental amounts of chemical compounds, for operation of vehicles and equipment.

The Proposed Action would permanently alter less than about 10 acres of land in the region by adding facilities, roads, pipelines and various impervious surfaces. The Proposed Action would result in the irretrievable loss of about 15,000 to 20,000 square feet of existing wetlands at the Lostine River Hatchery and the Lostine Adult Collection Facility. These are irretrievable losses rather than irreversible since these wetlands could be restored in the future. Similarly, the Proposed Action would result in some initial irretrievable loss of habitat at each site. These would be irretrievable losses rather than irreversible since most lost habitat would be restored over time through replanting and regrowth of vegetation.

The Proposed Action would result in small amounts of land irretrievably lost to livestock grazing at the Lostine River Hatchery and the Imnaha Final Rearing Facility. These would be irretrievable rather than irreversible losses because changes in management direction or the use of facilities could allow livestock grazing in the future at these sites.

3.17 Adverse Effects that Cannot Be Avoided

The Proposed Action includes use of best management practices, activities and other measures to minimize impacts. The nature and requirements of hatchery construction, however, tend to involve river locations that typically include wetland areas. The Proposed Action would involve construction in wetlands at two sites, the Lostine River Hatchery and the Lostine Adult Collection Facility. The Proposed Action includes a commitment to conduct formal wetland delineations and to implement any compensatory mitigation based on the outcome of the delineations and applicable regulations. Thus, the final design of these proposed facilities would incorporate feasible measures to avoid, minimize, rectify, and reduce potential impacts to the wetlands. However, after the use of these, the Proposed Action may yet result in adverse impacts to wetlands that cannot be avoided.

Similarly, the nature of hatchery operations often involves diversions of water from nearby rivers or streams. The Proposed Action's operations would require diversion of water from the Lostine and Imnaha Rivers at the Lostine River Hatchery, Imnaha Final Rearing Facility, and Imnaha Satellite Facility sites. Generally, these localized and temporary water diversions would have only minor impacts on river flows. The Proposed Action includes strategies to pump and replace diverted water at the Lostine River Hatchery under extremely low flow conditions. However, during extremely dry or cold periods the diversion could have adverse temporary impacts to flows and potentially to some individual fish in the diverted river reaches. These are adverse impacts that cannot be avoided.